



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Alan H. Karp et al.

Application No: 09/186,450

Filed: 11-5-98

For: TASK-SPECIFIC FLEXIBLE
BINDINGS IN A SOFTWARE
SYSTEM

Examiner: Ho T.

Art Unit: 2126

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9-10-04
Date

Appellant's Brief (Pursuant to 37 C.F.R. §1.192)

Dear Sir:

Applicant/ Appellant submits this Appeal Brief in connection with the above-referenced patent application which is on appeal to the Board of Patent Appeals and Interferences.

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TABLE OF CONTENTS

RELATED APPEALS AND INTERFERENCES	4
STATUS OF THE CLAIMS.....	4
STATUS OF AMENDMENTS	4
SUMMARY OF THE INVENTION	5
ISSUES PRESENTED.....	5
I: WHETHER CLAIMS 1-4, 7-8, 12-15, 20-22, 24-26, AND 30-31 ARE OBVIOUS IN VIEW OF HASHIMOTO.	5
II: WHETHER CLAIMS 5-6, 23, AND 35 ARE OBVIOUS IN VIEW OF HASHIMOTO AND GOVETT.	5
III: WHETHER CLAIMS 9 AND 27 ARE OBVIOUS IN VIEW OF HASHIMOTO AND NOMURA.	5
IV: WHETHER CLAIMS 10-11, 16-19, 28-29, AND 32-34 ARE OBVIOUS IN VIEW OF HASHIMOTO AND JI.	5
GROUPING OF CLAIMS	5
ARGUMENT	6
I: CLAIMS 1-4, 7-8, 12-15, 20-22, 24-26, AND 30-31 ARE NOT OBVIOUS IN VIEW OF HASHIMOTO BECAUSE HASHIMOTO DOES NOT DISCLOSE OR SUGGEST THE LIMITATIONS OF CLAIMS 1 AND 22.	6
A. Hashimoto does not disclose or suggest binding a local name used by a task to available resources as claimed in claims 1 and 22.	6
B. Hashimoto does not disclose or suggest binding a local name used by a task to multiple available resources as claimed in claims 1 and 22.	8
C. Hashimoto does not disclose or suggest binding a local name to available resources using a description of a desired resource as claimed in claims 1 and 22.	8
D. Hashimoto does not disclose or suggest a resource mediator that obtains a message from a task that contains a local name and that identifies a resource handler task for handling the message by resolving the local name as claimed in claims 1 and 22.	10
E. Hashimoto does not disclose or suggest a binding-type indicator that informs a resource mediator of whether to use the references or the description of the desired resource or a combination thereof when resolving the local name as claimed in claims 4-9.	10
F. Hashimoto does not disclose or suggest a message that includes a primary resource field that holds the local name for the desired resource and a set of additional resource fields each of which holds a local name that the task uses to refer to an additional resource as claimed in claims 12-15.	11
G. Hashimoto does not disclose or suggest a partial binding that includes a reference to a resource descriptor for a resource associated with a task that will complete the partial binding as claimed in claims 16-19 and 32-34.	11

II: CLAIMS 5-6, 23, AND 35 ARE NOT OBVIOUS IN VIEW OF HASHIMOTO AND GOVETT BECAUSE HASHIMOTO AND GOVETT DO NOT DISCLOSE OR SUGGEST THE LIMITATIONS OF CLAIMS 1 AND 22.....	12
III: CLAIMS 9 AND 27 ARE NOT OBVIOUS IN VIEW OF HASHIMOTO AND NOMURA BECAUSE HASHIMOTO AND NOMURA DO NOT DISCLOSE OR SUGGEST THE LIMITATIONS OF CLAIMS 1 AND 22.....	12
IV: CLAIMS 10-11, 16-19, 28-29, AND 32-34 ARE NOT OBVIOUS IN VIEW OF HASHIMOTO AND JI BECAUSE HASHIMOTO AND JI DO NOT DISCLOSE OR SUGGEST THE LIMITATIONS OF CLAIMS 1 AND 22.....	13
CONCLUSION	15
APPENDIX.....	16

REAL PARTY IN INTEREST

The real party in interest in this application is Hewlett-Packard Development Company, L.P.

RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any other related appeals or interferences that may directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

STATUS OF THE CLAIMS

Claims 1-4, 7-8, 12-15, 20-22, 24-26, and 30-31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,603,020 of *Hashimoto et al.* ("*Hashimoto*").

Claims 5-6, 23, and 35 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Hashimoto* and U.S. Patent No. 5,761,507 of *Govett* ("*Govett*").

Claims 9 and 27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Hashimoto* and U.S. Patent No. 5,790,853 of *Nomura et al.* ("*Nomura*").

Claims 10-11, 16-19, 28-29, and 32-34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Hashimoto* and U.S. Patent No. 5,623,600 of *Ji et al.* ("*Ji*").

Appellant appeals the rejection of all of the pending claims 1-35. Claims 1-35 as currently pending are set forth in the attached Appendix.

STATUS OF AMENDMENTS

Appellant is unaware of any amendments filed after the Final Office Action mailed March 10, 2004 which finally rejected claims 1-35.

SUMMARY OF THE INVENTION

Claims 1-35 are directed to a software system that enables a task to access resource handlers for available resources in the software system using a local name that is bound to a description of a desired resource. The software system of claims 1-35 includes a name space that holds a flexible binding that binds a local name used by a task to one or more of the available resources using a description of a desired resource (page 3, lines 12-19 of Appellant's Specification) and a resource mediator that obtains a message from the task which contains the local name and that identifies a resource handler task for handling the message by resolving the local name using the flexible binding (page 3, lines 19-24 of Appellant's Specification).

ISSUES PRESENTED

I: Whether claims 1-4, 7-8, 12-15, 20-22, 24-26, and 30-31 are obvious in view of *Hashimoto*.

II: Whether claims 5-6, 23, and 35 are obvious in view of *Hashimoto* and *Govett*.

III: Whether claims 9 and 27 are obvious in view of *Hashimoto* and *Nomura*.

IV: Whether claims 10-11, 16-19, 28-29, and 32-34 are obvious in view of *Hashimoto* and *Ji*.

GROUPING OF CLAIMS

Claims 1-3, 10-11, 20-31, and 35 stand together (Group I). Claims 4-9 stand together (Group II). Claims 16-19, 32-34 stand together (Group III).

ARGUMENT

I: Claims 1-4, 7-8, 12-15, 20-22, 24-26, and 30-31 are not obvious in view of *Hashimoto* because *Hashimoto* does not disclose or suggest the limitations of claims 1 and 22.

Appellant respectfully submits that claims 1 and 22, and claims 2-4, 7-8, 12-15, 20-21, 24-26 and 30-31 which depend from claims 1 and 22, are not obvious under 35 U.S.C. §103 in view of *Hashimoto* because *Hashimoto* does not disclose or suggest the limitations in claims 1 and 22 that enable a task to access resource handlers for available resources in a software system using a local name that is bound to a description of a desired resource. *Hashimoto* does not disclose or suggest binding a local name used by a task to available resources as claimed in claims 1 and 22. In addition, *Hashimoto* does not disclose or suggest binding a local name used by a task to multiple available resources as claimed in claims 1 and 22. Moreover, *Hashimoto* does not disclose or suggest binding a local name to available resources using a description of a desired resource as claimed in claims 1 and 22. Furthermore, *Hashimoto* does not disclose or suggest a resource mediator that obtains a message from a task which contains a local name and that identifies a resource handler task for handling the message by resolving the local name as claimed in claims 1 and 22.

A. *Hashimoto* does not disclose or suggest binding a local name used by a task to available resources as claimed in claims 1 and 22.

Appellant submits that *Hashimoto* does not disclose or suggest the limitation in claims 1 and 22 of binding a local name used by a task to available resources because *Hashimoto* does not disclose or suggest tasks that refer to resources using local names as claimed in claims 1 and 22. Instead, *Hashimoto* discloses a software system in which tasks (applications) refer to resources (files) using global names that are fixed according to a hierarchical naming structure (*Hashimoto*, col. 2, lines 8-14). For example, *Hashimoto* states that

When requested by the application program 8, (FIG. 3) to open a file, the operating system searches the file system 3 for the program-specified file...

(*Hashimoto*, col. 2, lines 18-20) and that

the application program specifies the complete path name /a/b/d/e/x to request the operating system to open the file x.

(*Hashimoto*, col. 2, lines 12-14) and that

file names are stored in directories. For example, the name of a file, x, is stored in the directory e...

(*Hashimoto*, col. 1, lines 25-26). Appellant submits that all tasks in *Hashimoto* would have to use the file system path name /a/b/d/e/x to refer to file x given the hierarchical structure of directories a/b/d/e and given the fact that the name for the file x is stored in the file system directory e rather than in a local name space for a task as claimed in claims 1 and 22. In contrast, the limitations of claims 1 and 22 enables a task to refer to a resource using a local name.

The Examiner has stated that

As to claim 1, Hashimoto discloses ... a local name (1 of task management table 6, Fig. 8) used by the task (task 8, Fig. 8) to resources...

(Page 2, last full paragraph, Office Action mailed 3/10/04) . Appellant submits that element 1 of task management table 6 in Fig. 8 of *Hashimoto* is not a local name as claimed in claims 1 and 22. Appellant submits that element 1 of task management table 6 is a reference to an entry in a file descriptor management table 7¹ that stores a pointer to a task-to-file correspondence management table 5. (*Hashimoto*, col. 2, lines 34-38).

¹ It appears that the number "1" inside block 6 in Fig. 8 of *Hashimoto* is positioned closest to the table 7. The number "1" inside block 6 may refer to an entry in the table 7 or the contents of an entry in the table 7. The text of *Hashimoto* does not discuss element 1 of the task management table 6 at all. Appellant submits that there is nothing in *Hashimoto* to even suggest that element 1 in Fig. 8 is a local name that a task uses to refer to a resource.

B. *Hashimoto* does not disclose or suggest binding a local name used by a task to multiple available resources as claimed in claims 1 and 22.

Appellant submits that *Hashimoto* does not disclose the limitation in claims 1 and 22 of binding a local name used by a task to one or more² of a set of available resources. Given that tasks in *Hashimoto* refer to a file using a hierarchical path name (*Hashimoto*, col. 2, lines 12-14) and given that a file name in *Hashimoto* is specified in the directory in the hierarchy that immediately precedes the file (*Hashimoto*, col. 1, lines 25-28), Appellant submits that the hierarchically structured file system of *Hashimoto* would not permit a task to use the same name to refer to multiple files.

C. *Hashimoto* does not disclose or suggest binding a local name to available resources using a description of a desired resource as claimed in claims 1 and 22.

Appellant submits that *Hashimoto* does not disclose or suggest the limitation in claims 1 and 22 of binding a local name to available resources using a description of a desired resource. Instead, the operating system of *Hashimoto* binds a name to a file using a device number and an i node number for the file. (*Hashimoto*, col. 2, lines 24-29). The device number and i node number of a file disclosed by *Hashimoto* is not a description of a desired resource as claimed in claims 1 and 22. Instead, the device number and i node number disclosed by *Hashimoto* specify a physical location of a file on a physical storage media. (*Hashimoto*, col. 1, line 40 through col. 2, line 7).

The Examiner has stated that

As to claim 1, *Hashimoto* discloses ... a flexible binding ... using a description (a file descriptor, line 65 column 10) of a desired resource (the file, line 65 column 10)...
(Page 2, last full paragraph, Office Action mailed 3/10/04). Appellant submits that the file descriptor disclosed by *Hashimoto* is a pointer to control tables

² The Examiner has stated that binding to "one or more" resources can be satisfied by binding to one resource. (Page 9, first full paragraph, Office Action mailed 3/10/04). It is nevertheless submitted that *Hashimoto* does not teach or suggest binding a local name to more than one resource as claimed in claims 1 and 22.

rather than a description of a desired resource as claimed in claims 1 and 22.

For example, *Hashimoto* states that

When requested by the application program 8, (FIG. 3) to open a file, the operating system searches the file system 3 for the program-specified file, then makes that file ready for access to and returns a file descriptor for the specified file to the application program 8.

(*Hashimoto*, col. 2, lines 18-22) and that

an entry is added to a file descriptor management table 7... the added entry, e.g., and entry number, is presented to the open-requesting application program...8 as a file descriptor...

(*Hashimoto*, col. 2, lines 34-41). Appellant submits that a file descriptor that is an entry number in a table 7 is not a description of a desired resource as claimed in claims 1 and 22.

Appellant further submits that the control tables referenced by the file descriptor of *Hashimoto* store device numbers and i node numbers that specify the location of file data on a physical storage media rather than a description of a desired resource as claimed in claims 1 and 22. For example, *Hashimoto* states that

a search is made of the file system for a file with the specified name. In practice, the device number and the i node number of the file are obtained. In subsequent step S11, a file management table 4...for that file thus obtained is created to store the device number and the i node number of the specified file.

(*Hashimoto*, col. 2, lines 24-29) and that

a pointer to the file management table 4...is stored in a task-to-file correspondence management table 5...

(*Hashimoto*, col. 2, lines 31-33) and that

a pointer to the task-to-file correspondence management table 5...is stored in the table 7.

(*Hashimoto*, col. 2, lines 35-36). Thus, the file descriptor of *Hashimoto* points to the table 7 which points to the table 5 which points to the table 4 which contains a device number and an i node number that identifies the location of file data on a physical storage media. It is submitted that a file descriptor that points ultimately to device and i node numbers is not a description of a desired resource as claimed in claims 1 and 22.

D. *Hashimoto* does not disclose or suggest a resource mediator that obtains a message from a task that contains a local name and that identifies a resource handler task for handling the message by resolving the local name as claimed in claims 1 and 22.

Appellant submits that *Hashimoto* does not disclose or suggest the limitation in claims 1 and 22 of a resource mediator that obtains a message from a task that contains a local name and that identifies a resource handler task for handling the message by resolving the local name.

The Examiner has stated that

Hashimoto does not explicitly disclose a resource mediator. However, *Hashimoto* teaches a table (task management table 6, Fig. 8) obtains a message (arrows³ from application program 8 to task management table 6, Fig. 8) from the task...

(Page 2, last two lines thru page, 3, line 1, Office Action mailed 3/10/04).

Appellant submits that the task management table 6 of *Hashimoto* is not a resource mediator that obtains a message from a task as claimed in claims 1 and 22. Instead, the task management table 6 of *Hashimoto* is a table contained within an operating system. (See Figures 3, 6, and 8 of *Hashimoto*).

The Examiner has also stated that

Hashimoto teaches ... a resource handler task (4, file management table, Fig. 8) for handling the message.

(Page 2, last two lines thru page, 3, line 3, Office Action mailed 3/10/04).

Appellant submits that the file management table 4 of *Hashimoto* is not a resource handler task as claimed in claims 1 and 22. Instead, the file management table 4 of *Hashimoto* is a table that stores device numbers and i node numbers for files. (*Hashimoto*, col. 2, lines 27-30 and col. 10, lines 28-32).

E. *Hashimoto* does not disclose or suggest a binding-type indicator that informs a resource mediator of whether to use the references or the description of the desired resource or a

³ Appellant submits that the arrows to and from the application program 8 shown in Figure 8 are not messages to the task management table 6. Instead, appellant submits that the arrows to and from the application program 8 are messages between the application program 8 and an operating system that maintains the task management table 6. Appellant has already shown that the operating system of *Hashimoto* refers to resources (files) using global names that are fixed according to a hierarchical naming structure (*Hashimoto*, col. 2, lines 8-14) rather than by resolving local names as claimed in claims 1 and 22.

combination thereof when resolving the local name as claimed in claims 4-9.

Appellant submits that *Hashimoto* does not disclose or suggest a binding-type indicator that informs a resource mediator of whether to use the references or the description of the desired resource or a combination thereof when resolving the local name as claimed in claims 4-9. Instead, the operating system of *Hashimoto* binds a name to a file using a device number and an i node number for the file. (*Hashimoto*, col. 2, lines 24-29).

F. *Hashimoto* does not disclose or suggest a message that includes a primary resource field that holds the local name for the desired resource and a set of additional resource fields each of which holds a local name that the task uses to refer to an additional resource as claimed in claims 12-15.

Appellant submits that *Hashimoto* does not disclose or suggest a message that includes a primary resource field that holds the local name for the desired resource and a set of additional resource fields each of which holds a local name that the task uses to refer to an additional resource as claimed in claims 12-15. Instead, the operating system of *Hashimoto* refers to a file using a hierarchical path name (*Hashimoto*, col. 2, lines 12-14).

G. *Hashimoto* does not disclose or suggest a partial binding that includes a reference to a resource descriptor for a resource associated with a task that will complete the partial binding as claimed in claims 16-19 and 32-34.

Appellant submits that *Hashimoto* does not disclose or suggest a partial binding that includes a reference to a resource descriptor for a resource associated with a task that will complete the partial binding as claimed in claims 16-19 and 32-34. Instead, the operating system of *Hashimoto* binds a name to a file using a device number and an i node number for the file. (*Hashimoto*, col. 2, lines 24-29).

II: Claims 5-6, 23, and 35 are not obvious in view of *Hashimoto* and *Govett* because *Hashimoto* and *Govett* do not disclose or suggest the limitations of claims 1 and 22.

Appellant respectfully submits that claims 5-6, 23, and 35 are not obvious under 35 U.S.C. §103 in view of *Hashimoto* and *Govett* because claims 5-6, 23, and 35 depend from claims 1 and 22 and *Hashimoto* and *Govett* do not teach or suggest the limitations of claims 1 and 22. Appellant has shown that *Hashimoto* does not disclose binding a local name used by the task to available resources, or binding a local name used by a task to multiple available resources, or binding a local name to available resources using a description of a desired resource, or a resource mediator that obtains a message from a task which contains a local name and that identifies a resource handler task for handling the message by resolving the local name as claimed in claims 1 and 22. Appellant also submits that *Hashimoto* does not suggest any of these limitations.

Govett does not disclose or suggest the limitations in claims 1 and 22 of binding a local name used by the task to available resources, binding a local name used by a task to multiple available resources, binding a local name to available resources using a description of a desired resource, and a resource mediator that obtains a message from a task which contains a local name and that identifies a resource handler task for handling the message by resolving the local name. Instead, *Govett* discloses an architecture for managing client-server communication. (*Govett*, col. 3, lines 18-63).

III: Claims 9 and 27 are not obvious in view of *Hashimoto* and *Nomura* because *Hashimoto* and *Nomura* do not disclose or suggest the limitations of claims 1 and 22.

Appellant respectfully submits that claims 9 and 27 are not obvious under 35 U.S.C. §103 in view of *Hashimoto* and *Nomura* because claims 9 and 27 depend from claims 1 and 22 and *Hashimoto* and *Nomura* do not teach or suggest the limitations of claims 1 and 22. *Hashimoto* does not disclose or suggest binding a local name used by the task to available resources, or

binding a local name used by a task to multiple available resources, or binding a local name to available resources using a description of a desired resource, or a resource mediator that obtains a message from a task which contains a local name and that identifies a resource handler task for handling the message by resolving the local name as claimed in claims 1 and 22.

Nomura does not disclose or suggest the limitations in claims 1 and 22 of binding a local name used by the task to available resources, binding a local name used by a task to multiple available resources, binding a local name to available resources using a description of a desired resource, and a resource mediator that obtains a message from a task which contains a local name and that identifies a resource handler task for handling the message by resolving the local name. Instead, *Nomura* discloses a workspace management system that places icons representing resources in particular areas of a display. (*Nomura*, col. 10, lines 47-67).

IV: Claims 10-11, 16-19, 28-29, and 32-34 are not obvious in view of *Hashimoto* and *Ji* because *Hashimoto* and *Ji* do not disclose or suggest the limitations of claims 1 and 22.

Appellant respectfully submits that claims 10-11, 16-19, 28-29, and 32-34 are not obvious under 35 U.S.C. §103 in view of *Hashimoto* and *Ji* because claims 10-11, 16-19, 28-29, and 32-34 depend from claims 1 and 22 and *Hashimoto* and *Ji* do not teach or suggest the limitations of claims 1 and 22. *Hashimoto* does not disclose or suggest binding a local name used by the task to available resources, or binding a local name used by a task to multiple available resources, or binding a local name to available resources using a description of a desired resource, or a resource mediator that obtains a message from a task which contains a local name and that identifies a resource handler task for handling the message by resolving the local name as claimed in claims 1 and 22.

Ji does not disclose or suggest the limitations in claims 1 and 22 of binding a local name used by the task to available resources, binding a local name used by a task to multiple available resources, binding a local name to

available resources using a description of a desired resource, and a resource mediator that obtains a message from a task which contains a local name and that identifies a resource handler task for handling the message by resolving the local name. Instead, *Ji* discloses a system with virus detection and removal during file transfer in a network. (*Ji*, col. 2, lines 39-44).

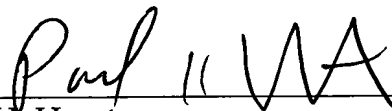
CONCLUSION

Appellant respectfully submits that the stated rejections cannot be maintained in view of the arguments set forth above. Appellant respectfully submits that all of the claims 1-35 are patentable under 35 U.S.C. §103 over the references cited by the Examiner and requests that the Board of Patent Appeals and Interferences direct allowance of the rejected claims.

Respectfully submitted,

By

Date: 9-10-04



Paul H. Horstmann
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APPENDIX

1. A software system, comprising:
 - a set of available resources;
 - name space which corresponds to a task executing in the software system, the name space for holding a flexible binding that binds a local name used by the task to one or more of the available resources using a description of a desired resource;
 - resource mediator that obtains a message from the task which contains the local name and in response the resource mediator identifies a resource handler task for handling the message by resolving the local name using the flexible binding.
2. The software system of claim 1, wherein the flexible binding includes a reference to a resource descriptor in a repository of the software system for one or more of the available resources.
3. The software system of claim 2, wherein the flexible binding includes a binding-type indicator that informs the resource mediator of whether to use the references or the description of the desired resource when resolving the local name.
4. The software system of claim 2, wherein the message includes a binding-type indicator that informs the resource mediator of whether to use the references or the description of the desired resource or a combination thereof when resolving the local name.
5. The software system of claim 4, wherein the binding-type indicator causes the resource mediator to use a tight binding when resolving the local name such that the resource mediator uses the references to resolve the local name.

6. The software system of claim 5, wherein the binding-type indicator causes the resource mediator to use the tight binding to resolve the local name if any of the references correspond to one of available resources and to use a flexible binding otherwise such that the flexible binding is based on the description of the desired resource.

7. The software system of claim 4, wherein the binding-type indicator causes the resource mediator to use a flexible binding when resolving the local name by searching the repository for a resource descriptor having a set of attributes that match the description of the desired resource.

8. The software system of claim 4, wherein the binding-type indicator causes the resource mediator to use a flexible binding to update the references when resolving the local name by searching the repository for a resource descriptor having a set of attributes that match the description of the desired resource.

9. The software system of claim 4, wherein the binding-type indicator causes the resource mediator to remove any of the references that correspond to resources that are not currently available when resolving a local name.

10. The software system of claim 1, wherein the resource mediator enables the task to transfer the flexible binding to another task in the software system.

11. The software system of claim 1, wherein the resource mediator enables the task to transfer the flexible binding to another task in the software system along with a set of additional flexible bindings.

12. The software system of claim 1, wherein the message includes a primary resource field that holds the local name for the desired resource and a set of additional resource fields each of which holds a local name that the task uses to refer to an additional resource for which a flexible binding is to be delivered to the resource handler task.

13. The software system of claim 12, wherein the primary resource field and each additional resource field includes a field for holding a local name which the task uses to refer to a name space to be used to resolve the corresponding local names.

14. The software system of claim 12, wherein the resource handler uses a default name space associated with the task to resolve the local names in the primary resource and additional resource fields.

15. The software system of claim 12, wherein the primary resource field includes a binding-type indicator that informs the resource mediator of how to resolve the local name in the primary resource field.

16. The software system of claim 1, wherein the flexible binding is a partial binding that includes a reference to a resource descriptor for a resource associated with a task that will complete the partial binding.

17. The software system of claim 16, wherein the resource mediator enables the task to transfer the partial binding to another task in the software system which generates a request to the task that will complete the partial binding.

18. The software system of claim 16, wherein the resource mediator enables the task to transfer the partial binding to another task in another

software system which generates a request to the task that will complete the partial binding.

19. The software system of claim 16, wherein the name space is arranged as a structured name space with an ordered list of frames.

20. The software system of claim 1, wherein the message specifies a repository view that holds a subset of resource descriptors contained in a repository of the software system and the flexible binding includes a reference to a resource descriptor in the repository view for each of the one or more available resources.

21. The software system of claim 1, wherein the message specifies a repository view that holds a subset of resource descriptors contained in a repository of the software system and the flexible binding is a partial binding that includes a reference to a resource descriptor for a resource associated with a task that will complete the partial binding.

22. A method for providing flexible bindings in a software system, comprising the steps of:

creating a name space which corresponds to a task executing in the software system;

writing a flexible binding into the name space that binds a local name used by the task to one or more of a set of available resources of the computer system using a description of a desired resource;

obtaining a message from the task which contains the local name and in response identifying a resource handler task for handling the message by resolving the local name using the flexible binding.

23. The method of claim 22, wherein the step of resolving the local name comprises the step of resolving the local name using a reference to a resource descriptor in a repository of the software system for each of the one or more available resources which is included in the flexible binding in response to a binding-type indicator in the message that specifies a tight binding.

24. The method of claim 22, wherein the step of resolving the local name comprises the steps of:

resolving the local name using a reference to a resource descriptor in a repository of the software system for each of the one or more available resources if any of the references are included in the flexible binding;

resolving the local name using the description of the desired resource if none of the references are included in the flexible binding.

25. The method of claim 22, wherein the step of resolving the local name comprises the step of searching a repository in the software system for a resource descriptor having a set of attributes that match the description of the desired resource in response to a binding-type indicator in the message that specifies a flexible binding.

26. The method of claim 22, wherein the step of resolving the local name comprises the steps of:

searching a repository in the software system for a resource descriptor having a set of attributes that match the description of the desired resource;

updating a list in the flexible binding of references to resource descriptors in the repository that match the description of the desired resource.

27. The method of claim 22, wherein the step of resolving the local name comprises the step of removing from a list in the flexible binding any

references to resource descriptors in a repository of the software system that correspond to resources that are not currently available.

28. The method of claim 22, further comprising the step of transferring the flexible binding to another task in the software system in response to the message from the task.

29. The method of claim 22, further comprising the step of transferring a set of additional flexible bindings to another task in the software system in response to the message from the task.

30. The method of claim 22, wherein the message specifies a name space that holds the flexible binding.

31. The method of claim 22, wherein the flexible binding is contained in a default name space associated with the task.

32. The method of claim 22, wherein the flexible binding is a partial binding that includes a reference to a resource descriptor in a repository of the software system for a resource associated with a task that will complete the partial binding.

33. The method of claim 32, further comprising the step of transferring the partial binding to another task in the software system which generates a request to the task that will complete the partial binding.

34. The method of claim 32, further comprising the step of transferring the partial binding to another task in another software system which generates a request to the task that will complete the partial binding.

35. The method of claim 22, wherein the step of resolving the local name comprises the step of resolving the local name using a reference to a resource descriptor in a repository of the software system for each of the one or more available resources in the flexible binding in response to a binding-type indicator in the message that specifies a tight binding and using a specified arbitration policy to select one of the references.